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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,528	06/19/2001	Oleg Wasynczuk	16410-108	2652

7590 07/14/2005

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EXAMINER	
SHARON, AYAL I	
ART UNIT	**PAPER NUMBER**
2123	

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/884,528	WASYNCZUK ET AL.
	Examiner	Art Unit
	Ayal I. Sharon	2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13,16-20 and 24-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,16-20 and 24-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. Claims 1-28 of U.S. Application 09/884,528 filed on 6/19/2001 are presented for examination. The application claims priority to provisional application 60/212,695, filed on 6/19/2000.
2. Claims 1-9, 12-13, 16-20, and 25-27 have been amended. Claims 14-15 and 21-23 have been cancelled, and claims 29-42 have been added.

Information Disclosure Statement

3. The information disclosure statement filed 8/27/2001 fails to comply with 37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office. The text of the IDS makes reference to an attached PTO Form 1449A (modified), however, the form does not appear in the scanned version of the case. Examiner requests another copy of the form, and apologizes for the inconvenience to the Applicants.
4. The IDS has been placed in the application file, but the information referred to therein has not been considered.
5. In the Amendment filed on 4/18/2005, the Applicants refer to an article titled "Distributed Simulation" from <u>Aerospace Engineering</u>, Nov. 2004. The

amendment states (see p.16, paragraph 2) that the article was "submitted herewith", however, the Article was not received.

6. Applicants are requested to provide a copy of the "Distributed Simulation" article.

Allowable Subject Matter

7. Claims 16-18, 30, 34-35, and 37-38 have not been rejected based on prior art. They would be allowable if rewritten in independent form including all of the limitations of the base claim and <u>all</u> intervening claims, <u>and</u> if all rejections of the independent claims (including 35 U.S.C. §101 rejections) were overcome.
8. The following statements are reasons for the indication of allowable subject matter.
9. None of the cited prior art references expressly teach the limitations of claim 16. Claim 16, however, is rejected under 35 U.S.C. §101 due to defects in independent claim 1.
10. Claims 17-18 and 34-35 depend from claim 16.
11. None of the cited prior art references expressly teach the use of a "resistor companion model", as claimed in claim 30. Claim 30, however, is rejected under 35 U.S.C. §101 due to defects in independent claim 1.
12. None of the cited prior art references expressly teach the limitations claimed in claims 37 and 38. Claims 37 and 38, however, and rejected under 35 U.S.C. §101 due to defects in independent claim 9.

Claim Rejections - 35 USC § 101

13. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

14. Claims 1-8 and 29-33 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility. The system claimed in independent claim 1 has no defined output, and therefore it does not have an output with a specific and substantial asserted utility or a well established utility. None of the dependent claims 2-8 rectify this defect.

15. Claims 9-26 and 34-38 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility. The method claimed in independent claim 9 claims "a method for simulating operation of a physical system having a plurality of subsystems", however, neither the claim nor the specification provide a specific and substantial or a well established utility for the claimed inventions. None of the dependent claims 10-26 rectify this defect.

16. Claims 27-28 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility. The system claimed in independent claim 27 has no defined output, and therefore it does not have an output with a specific and substantial asserted utility or a well established utility. Dependent claim 28 does not rectify this defect.

17. Claims 40-42 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 40-42 are neither concrete nor tangible. They not recite any structural or functional relationships. They mere claim desired performance characteristics.

Claim Rejections - 35 USC § 112

18. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

19. Claims 1-42 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

21. The prior art used for these rejections is as follows:

a. Liu, J. et al. "A Hierarchical Hybrid System Model and Its Simulation." IEEE Conf. on Decision and Control. Dec., 1999. (Henceforth referred to as "**Liu**").

b. Bain, W.L. "Parallel Discrete Event Simulation Using Synchronized Event Schedulers." Proceedings of the 5th Distributed Memory Computing Conference. Apr.8-12, 1990. pp.90-94. (Henceforth referred to as "**Bain**").

22. Claims 9, 12-13, 19-20, and 24-26 are rejected under 35 U.S.C. 102(a) as being anticipated by Liu.

23. In regards to Claim 9,

> 9. A method for simulating operation of a physical system having a plurality of physical subsystems, comprising:
> simulating a first physical subsystem with a first continuous-time simulation;

Liu teaches: "The modeling of hierarchical hybrid systems is achieved by combining continuous-time models with finite state machines." (See Liu, "Abstract").

> accepting a request for export of information relating to a number *n* state-related variables that characterize the state of the first physical subsystem in said simulating;

Liu also teaches (See Liu, Section "1. Introduction") the use of state variables in "***Q x X*** is a set of initial states".

> sending a first series of state-related numerical values, each numerical value containing information relating to the value of at least one of the *n* state-related variables; and

Liu teaches (See Liu, Section 2.2 "Modeling Continuous Dynamics): "In each discrete state *q* of a hybrid automaton, there is an 'open' continuous subsystem with the form of a set of ordinary differential equations (ODEs)".

> simulating a second physical subsystem with a second continuous-time simulation; wherein:

Liu teaches (See Liu, "1. Introduction"): "... The composition of two hybrid I/O automata is, roughly, to connect some inputs/outputs of one hybrid automaton with some outputs/inputs of another".

> the request is made in conjunction with said simulating a second physical subsystem;
> the first physical subsystem interacts with the second physical subsystem; and
> the at least one state-related variable characterizes at least a portion of the interaction between the first physical subsystem and the second physical subsystem.

Liu teaches (See Liu, Sections 2.2 "Modeling Continuous Dynamics and 2.3 "Hierarchical Hybrid Automata"): "In Ptolemy II, we use a signal-flow model to represent a continuous time (sub)system [9], which means that each component in the system is a function that maps input signals to output signals, and the components communicate via continuous-time signals."

24. In regards to Claims 12-13, See Liu figures 1,2,5 and associated text.

25. In regards to Claims 19-20, see Liu, especially Section 1, "Introduction", which teaches: "The composition of two hybrid I/O automata is, roughly, to connect some inputs/outputs of one hybrid automaton with some outputs/inputs of another."

26. In regards to Claims 24-26, see Liu, especially Fig.6 and associated text.

27. Claims 40-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Bain.

28. In regards to Claim 40,

> 40. (Currently Amended) In a distributed simulation of a physical system, the improvement comprising:
>
> running a continuous-time simulation of the physical system in a set of n computing devices;
>
> wherein the running occurs with a speed greater than O(n) times the speed of the simulation using a single one of the computing devices.

Bain expressly teaches "a new parallel synchronization algorithm using multiple synchronized event schedulers, one per processing node of the system." (See p.91, col.1, para.3).

Bain also expressly teaches that "... Thus, the total time overhead to advance the clock is O(D) ... D = $\log_2 N$." (See p.92, col.2, para.2). This is speed greater than O(N). In fact, Bain expressly teaches that: "By scaling the simulation model to maintain a constant processor load as processors are added, the algorithm thus becomes more efficient for larger systems and larger simulation models."

While the majority of the article is direct to discrete time simulation, the Bain reference also teaches that: "Future investigations will assess the applicability of this algorithm to continuous time simulations, such as the simulation of air traffic [11]. In these simulations, it may be possible to quantize the simulation clock without adversely affecting the accuracy of the results." (see p.93, col.2, para.3).

Examiner therefore finds that Bain also teaches the use of his algorithm for continuous time simulations.

Examiner notes that the Liu reference also makes use of Bain's suggested technique of quantization. Liu teaches (See Section 3, "Simulating Continuous Dynamics"): "The task of a simulator is to solve the set of ODEs numerically, that is, discretizing time into discrete points, and finding the behavior of the system (values of all state variables) at those points."

29. In regards to Claim 41,

> 41. (Currently Amended) The system of claim 40, wherein the running occurs with a speed greater than $O(n^2)$ times the speed of the simulation using a single one of the computing devices.

Bain expressly teaches that "... Thus, the total time overhead to advance the clock is O(D) ... D = $\log_2 N$." (See p.92, col.2, para.2). This is speed greater than $O(N^2)$. In fact, Bain expressly teaches that: "By scaling the simulation model to maintain a constant processor load as processors are added, the algorithm thus becomes more efficient for larger systems and larger simulation models."

30. In regards to Claim 42,

> 42. (Currently Amended) The system of claim 40, wherein the running occurs with a speed that is at least $O(n^3)$ times the speed of the simulation using a single one of the computing devices.

Bain also expressly teaches that "... Thus, the total time overhead to advance the clock is O(D) ... D = $\log_2 N$." (See p.92, col.2, para.2). This is speed greater than $O(N^3)$. In fact, Bain expressly teaches that: "By scaling the simulation model to maintain a constant processor load as processors are added, the algorithm thus becomes more efficient for larger systems and larger simulation models."

Claim Rejections - 35 USC § 103

31. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

32. The prior art used for these rejections is as follows:

a. Liu, J. et al. “A Hierarchical Hybrid System Model and Its Simulation.” IEEE Conf. on Decision and Control. Dec., 1999. (Henceforth referred to as “**Liu**”).

b. Bain, W.L. "Parallel Discrete Event Simulation Using Synchronized Event Schedulers." Proceedings of the 5th Distributed Memory Computing Conference. Apr.8-12, 1990. pp.90-94. (Henceforth referred to as “**Bain**”).

c. Defense Modeling and Simulation Office (DMSO), “Facility for Distributed Simulation Systems: Proposed Request for Comments”. Version 1.2. June 1998. Chapters 1, 8. (Henceforth referred to as “**DMSO Facility reference**”).

d. Defense Modeling and Simulation Office (DMSO), “High Level Architecture”. Last updated on Sept. 13, 2004. (Henceforth referred to as “**the DMSO HLA page**”).

33. The DMSO HLA page expressly teaches that “The HLA [standard] was adopted as the Facility for Distributed Simulation Systems 1.0 by the Object Management Group (OMG) in November 1998 and updated in 2001 ...”. In other words, the DMSO HLA page teaches that the HLA standard corresponds to the teachings of the DMSO Facility reference.

34. The claim rejections are hereby summarized for Applicants’ convenience. The detailed rejections follow.

35. Claims 1-8, 10-11, 27-29, 31-33 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu in view of DMSO Facility reference.

36. In regards to Claim 1,

> 1. A system, comprising:
>
> a first executing process that:
>
> implements a first continuous-time model to simulate a first subsystem, the first continuous-time model being programmed in a first language and having a first state variable; and

Liu teaches: "The modeling of hierarchical hybrid systems is achieved by combining continuous-time models with finite state machines." (See Liu, "Abstract).

Liu also teaches (See Liu, Section "1. Introduction") the use of state variables in "***Q x X*** is a set of initial states".

> sends a first series of state-related numerical values, each numerical value reflecting information relating to the value of the first state variable at a different point t_m in simulation time in the first continuous-time model; and

Liu teaches (See Liu, Section 2.2 "Modeling Continuous Dynamics): "In each discrete state *q* of a hybrid automaton, there is an 'open' continuous subsystem with the form of a set of ordinary differential equations (ODEs)".

> a second executing process that:

Liu teaches (See Liu, "1. Introduction"): "... The composition of two hybrid I/O automata is, roughly, to connect some inputs/outputs of one hybrid automaton with some outputs/inputs of another".

> receives said first series of state-related numerical values; and
>
> implements a second continuous-time model to simulate a second subsystem, the second continuous-time model being programmed in a second language and taking as an input the value of the first state variable from said first series of state-related numerical values.

Liu teaches (See Liu, Sections 2.2 "Modeling Continuous Dynamics and 2.3 "Hierarchical Hybrid Automata"): "In Ptolemy II, we use a signal-flow model to represent a continuous time (sub)system [9], which means that each component in the system is a function that maps input signals to output signals, and the components communicate via continuous-time signals."

While Liu teaches that "... The composition of two hybrid I/O automata is, roughly, to connect some inputs/outputs of one hybrid automaton with some

outputs/inputs of another" (See Liu, "1. Introduction"), Liu does not expressly teach that the first and second continuous-time models are programmed in different programming languages.

The DMSO Facility reference, on the other hand, expressly teaches the use of CORBA (Common Object Request Broker Architecture) and CORBA Services (see pp.16-17). It is well known in the art that "a CORBA-based program from any vendor, on almost any computer, operating system, programming language, and network, can interoperate with a CORBA-based program from the same or another vendor, on almost any other computer, operating system, programming language, and network." (See CORBA® BASICS, "What Is CORBA? What does it do?", ©1997-2004.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Liu with those of the DMSO Facility reference, because The DMSO Facility reference "... is a result of a DoD-wide effort, led by DMSO, to establish a common technical framework to facilitate the interoperability of all types of models and simulations among themselves and with command and control systems, as well as to facilitate the reuse of modeling and simulation components." (See DMSO Facility reference, p.15, section 0.4). The teachings of the DMSO reference would enable the reuse and inter-operability of the teachings of the Liu reference.

37. In regards to Claim 2, see Liu, especially Section 1, "Introduction", which teaches: "The composition of two hybrid I/O automata is, roughly, to connect

some inputs/outputs of one hybrid automaton with some outputs/inputs of another."

38. In regards to Claims 3-6, see Liu, especially Section 3, "Simulating Continuous Dynamics."

39. In regards to Claims 7-8, see Liu, especially Sections 3.1 and 3.2.

40. In regards to Claims 10 and 11,

While Liu teaches hierarchical hybrid automata models which communicate with one another, Liu does not expressly teach that the first and second models run on the same processor or on different processors.

The DMSO Facility reference, on the other hand, expressly teaches the use of CORBA (Common Object Request Broker Architecture) and CORBAServices (see pp.16-17). It is well known in the art that "a CORBA-based program from any vendor, on almost any computer, operating system, programming language, and network, can interoperate with a CORBA-based program from the same or another vendor, on almost any other computer, operating system, programming language, and network." (See CORBA® BASICS, "What Is CORBA? What does it do?", ©1997-2004.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Liu with those of the DMSO Facility reference, because The DMSO Facility reference "... is a result of a DoD-wide effort, led by DMSO, to establish a common technical framework to facilitate the interoperability of all types of models and simulations among themselves and

with command and control systems, as well as to facilitate the reuse of modeling and simulation components." (See DMSO Facility reference, p.15, section 0.4). The teachings of the DMSO reference would enable the reuse and inter-operability of the teachings of the Liu reference.

41. In regards to Claim 27, see the rejection of Claim 1.
42. In regards to Claim 28, see the rejections of claims 25 and 26.
43. In regards to Claim 29, see Liu, especially Section 1, "Introduction".
44. In regards to Claim 31, see Liu, especially Section 2.2, "Modeling Continuous Dynamics.
45. In regards to Claim 32, see the rejection of claim 10.
46. In regards to Claim 33, see the rejection of claim 11.
47. In regards to Claim 36, see the rejection of claim 24.
48. **Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu in view of Bain.**
49. In regards to Claim 39, Liu teaches the following limitations:

> at least one subsystem is simulated by computationally solving a system of ordinary differential equations;

See Liu, especially Section 2.2, "Modeling Continuous Dynamics" and the first paragraph of Section 3, "Simulating Continuous Dynamics."

> each subsystem simulation either
>
> > provides a series of output messages to another subsystem simulation, where the output messages encode state-related data from the subsystem, or
> >
> > receives a series of input messages from another subsystem simulation, where the input messages encode state related data from the other subsystem simulation, or

> both provides a series of output messages to another subsystem simulation, where the output messages encode state-related data from the subsystem, and receives a series of input messages from another subsystem simulation, where the input messages encode state-related data from the other subsystem simulation; and
>
> the computing system provides an output signal from at least one of the subsystem simulations.

See Liu, especially Section 1, "Introduction", which teaches: "The composition of two hybrid I/O automata is, roughly, to connect some inputs/outputs of one hybrid automaton with some outputs/inputs of another."

However, Liu, while teaching a hierarchical system model, it does not teach that the individual automata components are run on separate computing devices, as claimed in the following limitation:

> 39. (Currently Amended) A computing system for simulating a physical system, the physical system comprising two or more subsystems, the computing system comprising a plurality of computing devices, each simulating a subsystem of the physical system, wherein:

Bain, on the other hand, teaches a Parallel Discrete Event Simulation. Moreover, Bain teaches the use of an "Intel iPSC/2 parallel computer system". Examiner interprets that Bain's "Intel iPSC/2 parallel computer system" (See Bain's "Abstract") is a multi-processor computer, which corresponds to the claimed "the computing system comprising a plurality of computing devices.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Liu with those of Bain, because while Bain teaches (see p.93, last paragraph) that:

> Future investigations will assess the applicability of this algorithm to continuous time simulation, such as the simulation of air traffic [11]. In these simulations, it may be possible to quantize the simulation clock without adversely affecting the accuracy of the results.

Liu teaches (See Section 3, "Simulating Continuous Dynamics", para.1) that:

> The task of a simulator is to solve the set of ODEs numerically, that is, discretizing time into discrete points, and finding the behavior of the system (values of all state variables) at those points.

Response to Arguments

Re: Claim Rejections - 35 USC § 101

50. Examiner respectfully disagrees with the Applicants' arguments regarding the 35 USC §101 rejections of the claims, for the following reasons:

   a. The claims do not specifically recite any physical structure or technological embodiment. One possible remedy for this defect would be to amend the system and method claims to recite: "a computer-implemented system" or "a computer implemented method."

   b. In regards to the claims lacking a defined output, Applicants' claims in the instant application do not recite any defined output, and therefore they do not recite any practical application. While Examiner agrees with Applicants' argument (see Amendment filed 4/18/05, p.16. Emphasis added) that "the utility for simulation <u>more generally</u> is also spelled out by specific examples in several of the references cited by the Examiner in art rejections", this does contradict Examiner's assertion that Applicant's claims do not disclose any practical application use.

Re: Claim Rejections - 35 USC § 112

51. In regards to the 35 USC § 112, first paragraph rejection of the claims on the grounds of a lack of a specific or substantial asserted utility, the Applicants responded (see Amendment filed 4/18/05, p.16): "To the contrary, there are well established uses for continuous-time simulation technology that save money and risk." Examiner is maintaining these rejections on the grounds that the claim language (of all the claims in the instant application) does not recite a defined output, and therefore does not provide a practical application (use) for the claimed invention.

52. In regards to the 35 USC § 112, first paragraph rejections of claims 12-18, Examiner finds that Applicants' arguments (see Amendment filed 4/18/05, p.17) are persuasive. The rejections have been withdrawn.

Re: Claim Rejections - 35 USC § 102

53. Applicants have amended the claims to specifically claim "continuous-time" continuous-time models. The Fujimoto reference is directed to discrete time continuous-time models. Examiner is therefore withdrawing all rejections based on the Fujimoto reference, as necessitated by Applicants' amendment.

54. Examiner notes that Applicants' citation (see Amendment filed 4/18/05, p.18) of the "Distributed Simulation" article in the November 2004 edition of Aerospace

Engineering is not relevant to this application due to the 2004 date of the reference

Re: Claim Rejections - 35 USC § 103

55. Applicants have amended the claims to specifically claim "continuous-time" continuous-time models. The Fujimoto reference is directed to discrete time continuous-time models. Examiner is therefore withdrawing all rejections based on the Fujimoto reference, as necessitated by Applicants' amendment.

Conclusion

56. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached at (571) 272-3749.

Any response to this office action should be faxed to (703) 872-9306, or mailed to:

USPTO
P.O. Box 1450
Alexandria, VA 22313-1450

or hand carried to:

USPTO
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (571) 272-2100.

Paul L. Rodriguez 7/11/05
Primary Examiner
Art Unit 2125

Ayal I. Sharon

Art Unit 2123

July 8, 2005